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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 7123.1**Effective Date: March 13,
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Subject: Systems Engineering Procedural Requirements

Responsible Office: Office of the Chief Engineer

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Appendix I. Additional Reading

The following documents were used as reference materials in the development of this SE NPR. The documents are offered as informational sources and are not evoked in this SE NPR, though they may be referenced.

1. MIL-STD-499B (draft), Systems Engineering.

2. ISO/IEC 15288, System Life Cycle Processes.

3. ANSI/EIA 632, Processes for Engineering Systems.

EIA 632 is a commercial version that evolved from the never released, but fully developed 1994 Mil-Std 499B Systems Engineering. It was intended to provide a framework for developing and supporting universal SE discipline for both defense and commercial environments. EIA 632 was intended to be a top-tier standard further defined to lower level tier standards that define specific practices. IEEE 1220 is a second-tier standard that implements EIA 632 by defining one way to practice systems engineering. ISO/IEC 15288 defines system life processes for the international set plus for any domain (i.e., transportation, medical, commercial, et al.).

4. CMMI model.

The Capability Maturity Model[®] (CMM) IntegrationSM (CMMI) in its present form is a collection of best practices for the "development and maintenance" of both "products and services." The model was developed by integrating practices from four different CMMs—the "source models:" the CMM for software, for systems engineering, for integrated product development (IPD), and for acquisition. Organizations can use the model as a guide for improving their ability to develop (or maintain) products (and services) on time, within budget, and with desired quality. During the past decade, many organizations have used CMM and CMM-like concepts to bring order to their development processes. Additionally, it also provides these organizations the framework for enlarging the focus of process improvement to other areas that also affect product development—the discipline of systems engineering. During the past decade, new and effective concepts for organizing developmental work have surfaced and been adopted such as concurrent engineering or the use of integrated teams. Organizations using (or wishing to adopt these ideas) can also find support in the CMMI by using the model with integrated product and process development (IPPD) additions.

5. Defense Acquisition University Systems Engineering Fundamentals. Defense Acquisition University Press, Ft. Belvoir, VA, December 2000.

6. International Council on Systems Engineering Systems Engineering Guide.

7. ISO/IEC 19760, A Guide for the Application of ISO/IEC 15288 (System Life Cycle Processes).

8. ISO/AS9100, "Quality Management Systems, Aerospace, Requirements.

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